Title: Method and Apparatus for Simulating Game Accessories

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TITLE OF THE INVENTION

Method and Apparatus for Simulating Game Accessories

CROSS-REFERENCE TO RELATED APPLICATIONS

The following patent application is related:

U.S. patent application entitled, "METHOD AND APPARATUS FOR IDENTIFYING GAME PLAYERS AND GAME MOVES," invented by Scott Wolinsky, Ser. No. 09/823,877, filed on March 29, 2001.

FIELD OF THE INVENTION

The present invention relates to the field of telecommunications as it relates to remote apparatus for enabling game players present at remote locations to play a game over a communications link.

BACKGROUND OF THE INVENTION

There are numerous known games of chance in which a random number generator is used to determine an outcome. Such outcomes are determined in response to a game player inputting an instruction to determine the outcome, and transmitting that instruction through a common communication network, such as a telephone line, to a remotely located device that processes the instruction and generates the outcome.

By way of a first example, in U.S. Pat. No. 4,959,783 entitled "System And Method For Choosing Random Numbers And Delivering Such Numbers To Subscribers For Playing Games Of Chance" and issued to Scott et al. on September 25, 1990, numbers used in a lottery type game are randomly selected in response to receiving inputs by a caller/subscriber over a communicating (call-in) link.

The apparatus disclosed by the '783 patent does not generate a random outcome at the player's terminal, nor does it transmit a random outcome from the player's terminal to other terminals connected to the player's terminal via a communications link.

By way of a second example, U.S. Pat. No. 5,039,107 entitled "Football Board Game Directed To Simulating Athletic Competition" and issued to Jackson on August 13, 1991,

discloses a football board game played by a plurality of users. The game board is divided into a plurality of player regions, each player region having a calculator mounting area having a calculating device releasably coupled thereto. The calculating devices may include a random number generator for displaying a simulated random number on the calculator display. The player obtaining the highest random number enters the name of the team identifies as his number one team. Essentially, the calculating devices are used instead of a pair of dice.

The apparatus disclosed by the '107 patent does not enable play between remotely located players, whereby a random outcome generated by a terminal is transmitted to the terminals of the other players.

Although known remote gaming systems succeed in providing entertainment to remotely located game players, they pose a problem in that they often require specialized apparatus, in addition to a telephone that shares a telephone line with the apparatus. Further, it is difficult to identify who made which move and whose turn it is, especially for a game played by a plurality of players.

Computer games, played via a server located in a telephone network or over the Internet, normally require the user to subscribe to a service and/or pay to play a game. For such games, it is difficult to set up a game with a known opponent. Often, game players are playing alone or against a computer. In other cases, players participating in game play do not know who their opponents are, and thus the personal interaction with friends and family members is lost. Further, such games do not allow parties having a conversation to spontaneously play a game by placing their communication devices in a game mode.

It is therefore an object of the present invention to incorporate a compact gaming system into a communication terminal, such that parties having a conversation can initiate game play which include the use of game accessories without interfering with an ongoing conversation or having to connect additional equipment to their telephone lines.

It is a further object of the present invention to display at each terminal participating in a game, the identities of each player, to simulate the use of game accessories, and to identify each player's game moves in a clear and compact manner.

BRIEF SUMMARY OF THE INVENTION

In accordance with the principles of the present invention, the above and other objectives are realized in a method and apparatus for simulating game accessories wherein the random outcomes determined by one terminal are simultaneously indicated on each of a plurality of communication terminals including the terminal that generated the random outcome. Further, the identity of the terminal that transmitted the random outcome is identified at each of the terminals. Such a feature can be used to indicate the random moves of parties playing a game over a telephone line. Once a party activates the party's associated random generator to proceed with a game move, the party is prohibited from making any additional moves until after another party makes a move, unless of course the game rules allow the same player to go again, such as if the random generator simulates the rolling of "doubles" in a game such as Monopoly. The present invention can be incorporated into wireless telephones (e.g., cellphones), walkie talkies, wireless toys and other types of transceivers.

More particularly, once a communications link (e.g., wired, wireless, etc.) is established between two or more parties, their terminals are placed in a game mode which activates inband signal detection circuitry located within the terminals. Variable and/or multi-colored simulated game accessories (e.g., simulated spinners, dice, etc., consisting of LEDs and/or LCDs) at each terminal are activated, their color being dependent upon the source of the received random outcomes.

In a first embodiment of the invention to be described hereinafter, a method and apparatus for simulating a game accessory is disclosed, where at one of a plurality of communication terminals connected via a communications link, an instruction is inputted to initiate the determination of an outcome. In response to the inputted instruction, a random determination is made at the one terminal (not at a server to which the terminal is connected to) of a signal representing the outcome to send to each of the plurality of terminals (including the terminal that generated the random outcome) for display. The signal may be an inband signal transmitted over the communications link. The inband signal may include at least one dual tone multi-frequency (DTMF) signal. The communications link may be one of a telephone line and a wireless link. The displayed outcome simulates a game accessory. A plurality of identifiers used to differentiate

between the terminals are defined. Once a randomly generated outcome is generated, a determination is made at each of the terminals to determine from which terminal the signal indicating the random outcome originated from. The outcome and originating terminal identifier are identified at each of the terminals. Conversing parties associated with the terminals can spontaneously set up and play a game without interfering with an ongoing conversation over the communications link. Each identifier may be represented by a different color emitted by one or more light emitting diodes (LEDs). The terminals may consist or one or more of a speakerphone, a wireless telephone, a walkie talkie, wireless toy and a transceiver.

In a second embodiment, the game accessory may be displayed at each of the plurality of terminals in the form of one or more die simulated using one or more LEDs and/or LCDs. The color of the dots on each die, or any other portion of each die used will vary, depending upon the source of the generated random outcome that caused the die or dice to be rolled.

In a third embodiment, the game accessory may be displayed at each of the plurality of terminals in the form of spinner simulated using one or more LEDs and/or LCDs. The color of a pointer that spins around, or the points to which the pointer may land on will vary, depending upon the source of the generated random outcome that caused the spinner to be spun.

In a fourth embodiment, the game accessory may be displayed at each of the plurality of terminals in the form of a special game instruction simulated using one or more LEDs and/or LCDs. The special game instruction may be represented as a displayed instruction card (e.g., "ADVANCE TO GO" in Monopoly) with an indicator (e.g., a marking) in a particular color that indicates the source of the generated random outcome that cause that card to be drawn.

In a fifth embodiment, the game accessory may be displayed at each of the plurality of terminals in the form of a timer simulated using one or more LEDs and/or LCDs. The timer may be represented as a timer which does not require the use of a random generator. In a game requiring a time limit for a game player to perform one or more tasks, a timer is activated by a player at one of a plurality of terminals and represented as

a displayed timer (e.g., digital numeric display, bar graph, etc.) in a particular color that indicates the source that initiated the timer.

In a sixth embodiment, the game accessory may be displayed at each of the plurality of terminals in the form of a bet (wager) simulated using one or more LEDs and/or LCDs. The bet may be represented as a digital display, coins, tokens, bills, etc., which does not require the use of a random generator. In a game requiring a bet to be made, a bet is set by a player at one of a plurality of terminals and displayed in a particular color that indicates the source that placed the bet.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing summary, as well as the following detailed description of preferred embodiments of the invention, will be better understood when read in conjunction with the appended drawings. For the purpose of illustrating the invention, there is shown in the drawings embodiments which are presently preferred. It should be understood, however, that the invention is not limited to the precise arrangements and instrumentalities shown. In the drawings:

FIG. 1 shows a block diagram of terminal circuitry used in accordance with the present invention;

FIG. 2 shows a block diagram illustrating how different game accessory control instructions are inputted by a game player into the terminal circuitry in accordance with the present invention;

FIG. 3 shows how a game accessory simulating the rolling of a die or dice may be presented such that a particular player who rolls the die or dice is identified in accordance with the present invention;

FIG. 4 shows how a game accessory simulating the drawing of a special instruction card may be presented such that a particular player who draws the card is identified in accordance with the present invention;

FIG. 5 shows how a game accessory simulating the spinning of a spinner may be presented such that a particular player who spins the spinner is identified in accordance with the present invention;

FIG. 6 shows a method flow chart in accordance with the present invention;

FIG. 7 shows an electronic game board having a display in the center which simulates a game accessory in accordance with the present invention; and

FIG. 8 shows a terminal used by a game player to play with other game players in accordance with the present invention.

DETAILED DESCRIPTION OF THE INVENTION

The present invention is a method and apparatus for simulating game accessories wherein the random outcome determined by one terminal are simultaneously indicated on each of a plurality of communication terminals including the terminal that generated the random outcome. The identity of the terminal that transmitted the random outcome is identified at each of the terminals. Game move selections are also transmitted by each terminal and the identity of the respective terminals and/or players that transmitted the game move selections. Further, the present invention tracks and indicates whose turn it is to input a game move selection. In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the present invention. However, it will be apparent to one of ordinary skill in the art that these specific details need not be used to practice the present invention. In other instances, well known structures, interfaces, and processes have not been shown in detail in order not to unnecessarily obscure the present invention.

FIG. 1 illustrates communication terminal circuitry used to implement the present invention. The circuitry of the present invention may be incorporated into a standard wired telephone, wireless telephones (e.g., cellphones), walkie talkies, wireless toys and other types of transceivers. During an ongoing conversation, one of the users may activate a "Game Mode" option on their terminals which causes game mode activation circuit 135 to instruct CPU 130 to activate Player ID displays 110, and to change game mode display 115 to visually indicate that the game mode is activated. Upon such activation, the identities of terminals communicating over the communications link 155 are determined (such as retrieving them from memory) and are promptly displayed on Player ID displays 110. Additionally, color coded player ID key and turn indicator circuit 120 is activated by CPU 130, which illuminates a first colored LED next to a first Player identifier and a second colored LED next to a second player's identifier on each

player's terminal. One of the illuminated LEDs (player identifiers) on each terminal flashes next to the Player's ID in response to a "turn flash" instruction generated by CPU 130. All game move signals received from another terminal are received over communications link 155 and are processed by instruction signal receiver/decoder circuit 145 and forwarded to CPU 130. The CPU 130 keeps track of whether the terminal within which the CPU 130 resides sent a game move, or whether an external terminal sent a game move. The instruction signal receiver/decoder circuit 145 is controlled by CPU 130 such that it only processes signals received from outside the terminal. CPU 130 outputs game moves to game status display circuit 140. During game play, each player, in turn, activates his or her terminal's random generator 125 which outputs a random outcome, such as the number of spaces the player's displayed game piece is to be moved, or the amount of play money the player collects or has to spend. Upon activation of the random generator 125, a signal (e.g., a DTMF signal) is transmitted from instruction signal generator/dialer 150 via communications link 155 and is received by all of the terminals participating in the communication. The signal includes an identifier of the player or the player's terminal's identity that last activated the random generator 125. Each of the terminals process the signal and simulate a game accessory "state" displayed on each of the player's terminals. For example, if a game requires the use of dice and a particular player rolls the dice by pressing a "roll" button on the player's terminal, a simulation of the dice is displayed on each terminal with dots in the color representing the player that activated random generator 125 to simulate the roll of the dice. It is also possible for each of the terminals to display a text message simply stating that a particular player rolled a seven by throwing a pair of dice.

FIG. 2 shows how different game accessory control instructions are inputted by a game player into the terminal circuitry in accordance with the present invention. A game player's input device 210 (such as the keypad on a cellphone) is used to activate simulated game accessories during a game. Game accessories, such as a spinner, a die or dice, or an instruction card are simulated by inputting a request to a random number generator 125 which forwards a random outcome to CPU 130 which then instructs game accessory state signal generator 220 to activate a simulated game accessory 215 on all terminals participating in the game by causing game accessory state signal generator 220

to output the random outcome to all of the terminals participating in the game. Control instructions for game instructions such as a timer or an indication of a bet are inputted directly from the game player's input device 210 into the CPU 130, since there is no randomness involved.

FIG. 3 shows how to simulate the roll of a die or dice by different players. In this case, six LEDs of each player's color identifier is used such that the random outcome of a particular player is displayed by illuminating the dots on the simulated die or dice in an identifying color to revel the particular player who "rolled" the die or dice.

FIG. 4 shows how to simulate the drawing of an instruction game card from a plurality of possible cards (outcomes) by different players. In this case, each displayed card would have a colored indicator such that the random outcome would illuminate an identifying colored indicator to reveal the particular player who "drew" the simulated card.

FIG. 5 shows how to simulate the spinning of the spinner by different players. In this case, alternating LEDs of each player's color identifier is used, such that the random outcome displayed in the color representing the particular player who "spun" the spinner would be illuminated. In an alternative embodiment, a spinning needle (not shown) could be fitted with LEDs and/or LCDs that illuminate in the player's identifying color.

The game accessory may be displayed at each of the plurality of terminals in the form of a timer simulated using one or more LEDs and/or LCDs. The timer does not require the use of a random generator. In a game requiring a time limit for a game player to perform one or more tasks, a timer is activated by a player at one of a plurality of terminals and displayed in numeric or bar graph format in a particular color that indicates the particular player that initiated the timer.

The game accessory may also be displayed at each of the plurality of terminals in the form of a bet (wager) simulated using one or more LEDs and/or LCDs. The bet does not require the use of a random generator. In a game requiring that a wager or payment be made, the amount of a bet is entered by a player at one of a plurality of terminals and may be represented by a digital numeric display, simulated coins, tokens, bills, etc., and displayed in a particular color that indicates the player that placed the bet or adjacent to text that identifies the player.

Referring now to FIG. 6, a flow chart of a method implemented by the present invention is illustrated. The method is initiated at step 605 after a communications link is established between two or more game player's terminals. If each of the communicating terminals incorporate the features of the present invention, the users of the terminals may spontaneously decide to play a game at any time during an ongoing conversation by having one or more of the users activate a "Game Mode" option on their terminals (step 610). Upon such activation, the identities of terminals communicating over the communications link may be promptly displayed on each terminal (by retrieving previously stored information from memory) or may be manually inputted by the players at the time that the game mode is activated (step 615). Identifiers are then defined for each terminal by assigning a color to represent their upcoming game move and game accessory outcomes, and to differentiate between the different players' moves and activation of game accessories (step 620). A different colored LED is illuminated next to each player's name or telephone number (step 625). A determination is then made as to which player goes first (step 630). Such a determination can be based upon which player originally initiated the communication between players, or by providing an input means for selecting which player goes first. Upon determining which player goes first, one of the illuminated LEDs (player identifiers) on each terminal flashes next to the Player's ID in response to a "turn flash" instruction (step 635). It would then be Player 1's turn to input a game move selection on his or her terminal. Upon Player 1's input, an instruction indicating a request for a random game move is processed by Player 1's terminal and a random outcome is conveyed to both terminals (step 640). Upon receipt of the instruction, the flashing LED ceases to flash and a determination is made as to which terminal caused the random outcome (step 645). Then Player 1's random outcome is conveyed by simulating the action of the game accessory using a color representing Party 1 even though the actual outcome has already been determined. A color coded LED is illuminated to represent the random outcome on a game board incorporated at each player's terminal (step 650). A determination is then made as to whether the game is over (e.g., did a player win?) (step 655). If it is determined that the game is not over, a determination is made as to which player is to make the next move (step 660). Upon such determination, again one of the illuminated LEDs on each terminal flashes next to the next Player's ID in response to another "turn flash" instruction (back to step 665). The game proceeds in such a fashion until it is determined that the game is over (step 655). An

indication of the winner is conveyed on both terminals (step 670). The game then ends (step 675).

FIG. 7 shows an example of an electronic game board for Monopoly (not all spaces are shown due to space restrictions) having a display in the center which simulates a game accessory in accordance with the present invention. The identities and colors are assigned, as shown at the top portion of the drawing. The simulation of a game accessory (in this case the rolling of dice) is simulated in the center of the game board. The players' positions, movements and identities are simulated on the surrounding game pieces. Such a game board may be designed to be insertable into a wireless communication device.

Referring now to FIG. 8, a wireless communication device is illustrated in accordance with the present invention. The features afford compact and portable game playing features. For example, Scott calls his son Bobby to see how things are going at college. Both Scott and Bobby are equipped with a wireless communication terminal in accordance with the present invention. During their conversation, Bobby asks Scott, "would you like to play a game of Monopoly?" Bobby agrees but insists that the game also include Maria and Julie. So Bobby activates a conferencing feature on his terminal and conferences in Maria and Julie onto the communications link. All of the players insert auxiliary Monopoly game cards/modules into their wireless communication terminals (see FIG. 7). The auxiliary game cards provide additional software, features and functions that go beyond the capabilities of the base communication terminal. The player's energize a "game mode" button on their devices. Before doing so, the devices performed as standard cellphones. Upon activating the game mode, an LCD on the auxiliary game cards display the player names and/or telephone numbers and assigns colors (identifiers) used to differentiate between each player (e.g., green for Scott, red for Maria, blue for Bobby, and yellow for Julie). The flashing of a red colored LED next to Scott's name on each device indicates that it is Scott's turn to go first. Scott moves by depressing the "roll" push button on his terminal. A random output from Scott's terminal causes one or more instructions to be conveyed to all of the players' terminals including his own. The display on all of the players' terminals simulate a set of 3-dimensional dice rolling and slowing down until they halt. Game moves are then made automatically by

software within each of the terminals. The instructions are processed in each of the players' devices by a pre-programmed microprocessor (e.g., CPU) which controls all functions of the terminal's game mode. Scott, Maria, Bobby and Julie continue playing the game by taking turns inputting requests (instructions) for randomly selected game moves until the game ends.

It will be appreciated by those skilled in the art that changes could be made to the embodiments described above without departing from the broad inventive concept thereof. It is understood, therefore, that this invention is not limited to the particular embodiments disclosed, but it is intended to cover modifications within the spirit and scope of the present invention as defined by the appended claims.